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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/007,093 01/14/98 ANAND

N 1038-765-MIS

EXAMINER

HM12/0106

TUNG, M

ART UNIT

PAPER NUMBER

1644

10

SIM & BURNEY
SUITE 701
330 UNIVERSITY AVENUE
TORONTO ON M5G 1R7
CANADA

AIR MAIL

DATE MAILED:

01/06/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/007,093

Applicant(s)
Anand, et al.

Examiner

Group Art Unit
1644



☒ Responsive to communication(s) filed on Oct. 8, 1999

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-11, 27, and 28 is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-11, 27, and 28 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 7

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

1. Claims 1-33 were originally presented.
2. Claims 26 and 29-33 were cancelled in the paper filed 1/14/98, Paper No. 2
3. Non-elected claims 12-25 were cancelled in the paper filed 1/25/99, Paper No. 4.
4. Claims 1-11, 27 and 28 are pending.

Information Disclosure Statement

5. The information disclosure statement filed fails to comply with 37 C.F.R. 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The references lines through on the PTO Form 1449, filed 10/26/99, Paper No. 9, were considered to the extent possible by the Examiner. However, the references lines through were not supplied to the Examiner and not available in the parent case, and therefore could not be considered.

Drawings

6. The drawings submitted 10/15/99 have been accepted by the drafts person.

Claim Rejections - 35 U.S.C. § 112

7. In light of the amendment to claims 1-11, 27 and 28 in Paper No. 8, the rejection under 35 U.S.C. § 112, second paragraph, is hereby withdrawn.

Claim Rejections - 35 U.S.C. § 102

8. The rejection of claims 1, 2, 27 and 28 under 35 U.S.C. 102(b) as being anticipated by Barber (US Patent #4,950,480), is hereby withdrawn in light of the amendments to the claims in the paper filed 10/8/99, Paper No. 8, and the remarks by Applicants on page 7 of Paper No. 9 that the exact location of the peptides of Barber cannot be controlled.
9. The rejection of claims 1, 2, 27 and 28 under 35 U.S.C. 102(b) as being anticipated by Barber (US Patent #5,194,254), is hereby withdrawn in light of the amendments to the claims in the paper filed 10/8/99, Paper No. 8, and the remarks by Applicants on page 7 of Paper No. 9 that the exact location of the peptides of Barber cannot be controlled.

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10. The rejection of claims 1, 2, 27 and 28 under 35 U.S.C. 102(b) as being anticipated by Baier et al.(U), is hereby withdrawn in light of the amendments to the claims in the paper filed 10/8/99, Paper No. 8, which now recites a bivalent antibody having the entire heavy and light chains.

Claim Rejections - 35 U.S.C. § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Applicant's arguments filed in Paper No. 8 have been fully considered but they are not persuasive.

13. Claims 1-4, 27 and 28 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Barber (US Patent No. 4,950,480) in view of Skea (*Vaccine 11*(10):994-1003, 1993), for the same reasons set forth in Paper No. 8.

14. The Applicants argue that there are inherent disadvantages to the biotin-streptavidin system that was used by the '480 patent and that the Applicants employ a recombinant approach to provide the conjugate antibody. The Applicants also argue on pages 9 and 10 of Paper No. 8, that Skea uses the same method as Barber, who co-authored the paper, it suffers the same defects and cannot remedy those of Barber. This is not found persuasive because one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts. One of ordinary skill in the art at the time the invention was made would have been motivated to use the anti-class II major histocompatibility complex monoclonal antibodies as a delivery vehicle for antigen, wherein the two molecules are coupled with avidin as a bridge with minimal disruption to each in a method to more efficiently immune animals against the taught antigen, using a monoclonal antibody conjugate with an antigen attached to the C-terminal end of the molecule as taught by Skea (see Figure 2, panel (a)) in the monoclonal antibody composition taught by the '480 patent. From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole is *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

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15. Claims 1-4, 27 and 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Barber (US Patent No. 5,194,254) in view of Skea (*Vaccine* 11(10):994-1003, 1993), for the same reasons set forth in Paper No. 8.

16. The Applicants argue that there are inherent disadvantages to the biotin-streptavidin system that was used by the '254 patent and that the Applicants employ a recombinant approach to provide the conjugate antibody. The Applicants also argue on pages 9 and 10 of Paper No. 8, that Skea uses the same method as Barber, who co-authored the paper, it suffers the same defects and cannot remedy those of Barber. This is not found persuasive because one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts. One of ordinary skill in the art at the time the invention was made would have been motivated to use the anti-class II major histocompatibility complex monoclonal antibodies as a delivery vehicle for antigen, wherein the two molecules are coupled with avidin as a bridge with minimal disruption to each in a method to more efficiently immune animals against the taught antigen, using a monoclonal antibody conjugate with an antigen attached to the C-terminal end of the molecule as taught by Skea (see Figure 2, panel (a)) in the monoclonal antibody composition taught by the '254 patent. From the combined teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole is *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

The following new rejections are necessitated by amendment:

17. Claims 1-11, 27 and 28 are rejected under 35 U.S.C. 102(a) as being unpatentable over Barber (US Patent #4,950,480), in view of Baier et al. (*J. Virol.* 69(4):2357-2365, 1995).

18. The '480 patent teaches a method of generating an immune response using an antibody conjugate molecule specific for a surface structure of antigen presenting cells which comprises an antigen, and wherein the antigen presenting cells are class I major histocompatibility complex expressing cells, or class II major histocompatibility complex expressing cells (see col. 2, lines 17-33, lines 42-49 and col. 3, lines 12-40). However, in order to increase the inherently weak immunogenicity of synthetic peptide vaccines (see the abstract), Baier et al. teach a method of generating an immune response in an animal using recombinant antibody conjugates recombinantly produced using chimeric genes that encode fusion proteins of antibody fragments expressing short, immunogenic HIV-1 peptides (page 2358, col. 1, paragraph 1) and wherein said antibody conjugate were specific for antigen presenting cells and was known in the art (see page 2357, col. 2 paragraph 2, page 2363, col. 1, paragraph 2 and col. 2,

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paragraph 2. Additionally, Baier et al. teach chimeric anti-human HLA-DR class II antigens and that HIV-derived epitopes are located at the C-terminal end of the antibody (page 2358, col. 1, paragraph 2 and page 2360, Figure 1), as recited in claims 4-6. Furthermore, Baier et al. teach bivalent monoclonal antibodies, which characteristically would have heavy and light chains, absent evidence to the contrary (see page 2363, col. 2 paragraph 2), as recited in claims 3-6. Baier et al. teach that chimeric antibodies can be used to overcome the inherently weak immunogenicity of a peptide, as recited in claim 7. Baier, et al. additionally teach that multiple similar or different, antigen moieties can be conjugated to said antibodies (see page 2358, paragraph 1), as recited in claims 8-10. An antigen having two 15 amino acids is taught on page 2359, col. 1, first paragraph under the heading of "RESULTS", as recited in claim 11. The chimeric Fabs bound specifically to human antigen presenting cells displaying the relevant HLA-DR molecules and demonstrated improved immunogenicity as measured by increased stimulation of IL-2 production in vitro by human CD4⁺ Th cells from donors exposed to HIV-1 antigens (page 2358, in particular), and thus, an immunogenic composition, as recited in claim 29. The '254 patent also does not teach the antibodies being recombinant, as recited in the amended claims. However, one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts. Thus, one of ordinary skill in the art would have had a reasonable expectation of success to obtain the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

19. The Applicants argue that there are inherent disadvantages to the biotin-streptavidin system that was used by the '480 patent and that the Applicants employ a recombinant approach to provide the conjugate antibody. This is not found persuasive because one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts, as discussed, *supra*. The Applicants also argue in the paper filed October 15, 1999, that Baier teaches fragments and not whole monoclonal antibodies, as recited by the Applicants. This is not found persuasive because one of ordinary skill in the art would have been motivated to make the complete monoclonal antibody given the teaching of bivalent antibody fragments, taught by Baier (see page 2363, col. 2, paragraph 2), in order to provide a complete Fc and Fab region for a more normal *in vivo* immune response to the antibody complex, since the Fc region allows for the uptake of the antigen-antibody complex by antigen presenting cells. The Applicants are invited to submit a Declaration Under 38 C.F.R. 1.131, as indicated in the response on page 8 of Paper No. 8.

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20. Claims 1-11, 27 and 28 are rejected under 35 U.S.C. 102(b) as being unpatentable over Barber (US Patent #5,194,254) in view of Baier et al. (*J. Virol.* 69(4):2357-2365, 1995).

21. The '254 patent teaches a method of generating an immune response using an antibody conjugate molecule specific for a surface structure of antigen presenting cells which comprises an antigen, and wherein the antigen presenting cells are class I major histocompatibility complex expressing cells, or class II major histocompatibility complex expressing cells, (see the abstract, col. 2, lines 21-29, lines 44-51 and col. 3, lines 40-56 and col. 5, lines 9-15). The '254 patent does not teach an antibody wherein the antigen moiety is located at the C-terminal end of at least one of the heavy and light chains, as recited in claims 3-6, and wherein the molecule is weakly-immunogenic, as recited in claim 7. However, in order to increase the inherently weak immunogenicity of synthetic peptide vaccines (see the abstract), Baier et al. teach a method of generating an immune response in an animal using recombinant antibody conjugates recombinantly produced using chimeric genes that encode fusion proteins of antibody fragments expressing short, immunogenic HIV-1 peptides (page 2358, col. 1, paragraph 1) and wherein said antibody conjugate were specific for antigen presenting cells and was known in the art (see page 2357, col. 2 paragraph 2, page 2363, col. 1, paragraph 2 and col. 2, paragraph 2. Additionally, Baier et al. teach chimeric anti-human HLA-DR class II antigens and that HIV-derived epitopes are located at the C-terminal end of the antibody (page 2358, col. 1, paragraph 2 and page 2360, Figure 1), as recited in claims 4-6. Furthermore, Baier et al. teach bivalent monoclonal antibodies, which characteristically would have heavy and light chains, absent evidence to the contrary (see page 2363, col. 2 paragraph 2), as recited in claims 3-6. Baier et al. teach that chimeric antibodies can be used to overcome the inherently weak immunogenicity of a peptide, as recited in claim 7. Baier, et al. additionally teach that multiple similar or different, antigen moieties can be conjugated to said antibodies (see page 2358, paragraph 1), as recited in claims 8-10. An antigen having two 15 amino acids is taught on page 2359, col. 1, first paragraph under the heading of "RESULTS", as recited in claim 11. The chimeric Fabs bound specifically to human antigen presenting cells displaying the relevant HLA-DR molecules and demonstrated improved immunogenicity as measured by increased stimulation of IL-2 production in vitro by human CD4⁺ Th cells from donors exposed to HIV-1 antigens (page 2358, in particular), and thus, an immunogenic composition, as recited in claim 28. The '254 patent also does not teach the antibodies being recombinant, as recited in the amended claims. However, one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts. Thus, one of ordinary skill in the art would have had a reasonable expectation of success to obtain the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

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22. The Applicants argue that there are inherent disadvantages to the biotin-streptavidin system that was used by the '254 patent and that the Applicants employ a recombinant approach to provide the conjugate antibody. This is not found persuasive because one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts, as discussed, *supra*. The Applicants argue in the paper filed October 15, 1999, that Baier teaches fragments and not whole monoclonal antibodies, as recited by the Applicants. This is not found persuasive because one of ordinary skill in the art would have been motivated to make the complete monoclonal antibody given the teaching of bivalent antibody fragments, taught by Baier (see page 2363, col. 2, paragraph 2), in order to provide a complete Fc and Fab region for a more normal *in vivo* immune response to the antibody complex, since the Fc region allows for the uptake of the antigen-antibody complex by antigen presenting cells. The Applicants are invited to submit a Declaration Under 38 C.F.R. 1.131, as indicated in the response on page 8 of Paper No. 8.
23. Claims 1-11, 27 and 28 are rejected under 35 U.S.C. § 102(a) as being unpatentable over Baier et al. (*J. Virol.* 69(4):2357-2365, 1995).
24. Baier et al.(U) teach a method of generating an immune response in an animal using recombinant antibody conjugates recombinantly produced using chimeric genes that encode fusion proteins of antibody fragments expressing short, immunogenic HIV-1 peptides (page 2358, col. 1, paragraph 1) and wherein said antibody conjugate were specific for antigen presenting cells and was known in the art (see page 2357, col. 2 paragraph 2, page 2363, col. 1, paragraph 2 and col. 2, paragraph 2. Additionally, Baier et al. teach chimeric anti-human HLA-DR class II antigens and that HIV-derived epitopes are located at the C-terminal end of the antibody (page 2358, col. 1, paragraph 2 and page 2360, Figure 1), as recited in claims 4-6. Furthermore, Baier et al. teach bivalent monoclonal antibodies, which characteristically would have heavy and light chains, absent evidence to the contrary (see page 2363, col. 2 paragraph 2), as recited in claims 3-6. Baier et al. teach that chimeric antibodies can be used to overcome the inherently weak immunogenicity of a peptide, as recited in claim 7. Baier, et al. additionally teach that multiple similar or different, antigen moieties can be conjugated to said antibodies (see page 2358, paragraph 1), as recited in claims 8-10. An antigen having two 15 amino acids is taught on page 2359, col. 1, first paragraph under the heading of "RESULTS", as recited in claim 11. The chimeric Fabs bound specifically to human antigen presenting cells displaying the relevant HLA-DR molecules and demonstrated improved immunogenicity as measured by increased stimulation of IL-2 production *in vitro* by human CD4⁺ Th cells from donors exposed to HIV-1 antigens (page 2358, in particular), and thus, an immunogenic composition, as recited in claim 28. Baier does not teach a monoclonal antibody moiety having the entire heavy and

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light chains. However, one of ordinary skill in the art would have been motivated to make the complete monoclonal antibody given the teaching of bivalent antibody fragments, taught by Baier (see page 2363, col. 2, paragraph 2), in order to provide a complete Fc and Fab region for a more normal *in vivo* immune response to the antibody complex, since the Fc region allows for the uptake of the antigen-antibody complex by antigen presenting cells. Thus, one of ordinary skill in the art would have had a reasonable expectation of success to obtain the claimed invention. Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

25. The Applicants argue in the paper filed October 15, 1999, that Baier teaches fragments and not whole monoclonal antibodies, as recited by the Applicants. This is not found persuasive because one of ordinary skill in the art would have been motivated to make the complete monoclonal antibody given the teaching of bivalent antibody fragments, taught by Baier (see page 2363, col. 2, paragraph 2), in order to provide a complete Fc and Fab region for a more normal *in vivo* immune response to the antibody complex, as discussed, *supra*. The Applicants are invited to submit a Declaration Under 38 C.F.R. 1.131, as indicated in the response on page 8 of Paper No. 8.

Double Patenting

26. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

27. A timely filed terminal disclaimer in compliance with 37 C.F.R. 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 C.F.R. 1.130(b).

28. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 C.F.R. 3.73(b).

29. Claim 1-11, 27 and 28 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 4,950,480, over Baier et al. (*J. Virol.* 69(4):2357-2365, 1995).

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30. The Applicants argue that none of the Applicant's claims are taught by the Barber reference because the structure obtained recombinantly cannot be done using the approach of Barber. This is not found persuasive because one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts, as discussed, *supra*. However, in order to increase the inherently weak immunogenicity of synthetic peptide vaccines (see the abstract), Baier et al. teach a method of generating an immune response in an animal using recombinant antibody conjugates recombinantly produced using chimeric genes that encode fusion proteins of antibody fragments expressing short, immunogenic HIV-1 peptides (page 2358, col. 1, paragraph 1) and wherein said antibody conjugate were specific for antigen presenting cells and was known in the art (see page 2357, col. 2 paragraph 2, page 2363, col. 1, paragraph 2 and col. 2, paragraph 2. Additionally, Baier et al. teach chimeric anti-human HLA-DR class II antigens and that HIV-derived epitopes are located at the C-terminal end of the antibody (page 2358, col. 1, paragraph 2 and page 2360, Figure 1), as recited in claims 4-6. Furthermore, Baier et al. teach bivalent monoclonal antibodies, which characteristically would have heavy and light chains, absent evidence to the contrary (see page 2363, col. 2 paragraph 2), as recited in claims 3-6. Baier et al. teach that chimeric antibodies can be used to overcome the inherently weak immunogenicity of a peptide, as recited in claim 7. Baier, et al. additionally teach that multiple similar or different, antigen moieties can be conjugated to said antibodies (see page 2358, paragraph 1), as recited in claims 8-10. An antigen having two 15 amino acids is taught on page 2359, col. 1, first paragraph under the heading of "RESULTS", as recited in claim 11. The chimeric Fabs bound specifically to human antigen presenting cells displaying the relevant HLA-DR molecules and demonstrated improved immunogenicity as measured by increased stimulation of IL-2 production in vitro by human CD4⁺ Th cells from donors exposed to HIV-1 antigens (page 2358, in particular), and thus, an immunogenic composition, as recited in claim 28. The '480 patent also does not teach the antibodies being recombinant, as recited in the amended claims. However, one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts. Thus, one of ordinary skill in the art would have had a reasonable expectation of success to obtain the claimed invention. The arguments concerning Baier, et al. have been discussed, *supra*.
31. Claim 1-11, 27 and 28 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 5,194,254, over Baier et al. (*J. Virol.* 69(4):2357-2365, 1995).
32. The Applicants argue that The Applicants argue that none of the Applicant's claims are taught by the Barber reference because the structure obtained recombinantly cannot be done using the approach of Barber. This is not found persuasive because one of ordinary

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skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts, as discussed, *supra*. However, in order to increase the inherently weak immunogenicity of synthetic peptide vaccines (see the abstract), Baier et al. teach a method of generating an immune response in an animal using recombinant antibody conjugates recombinantly produced using chimeric genes that encode fusion proteins of antibody fragments expressing short, immunogenic HIV-1 peptides (page 2358, col. 1, paragraph 1) and wherein said antibody conjugate were specific for antigen presenting cells and was known in the art (see page 2357, col. 2 paragraph 2, page 2363, col. 1, paragraph 2 and col. 2, paragraph 2. Additionally, Baier et al. teach chimeric anti-human HLA-DR class II antigens and that HIV-derived epitopes are located at the C-terminal end of the antibody (page 2358, col. 1, paragraph 2 and page 2360, Figure 1), as recited in claims 4-6. Furthermore, Baier et al. teach bivalent monoclonal antibodies, which characteristically would have heavy and light chains, absent evidence to the contrary (see page 2363, col. 2 paragraph 2), as recited in claims 3-6. Baier et al. teach that chimeric antibodies can be used to overcome the inherently weak immunogenicity of a peptide, as recited in claim 7. Baier, et al. additionally teach that multiple similar or different, antigen moieties can be conjugated to said antibodies (see page 2358, paragraph 1), as recited in claims 8-10. An antigen having two 15 amino acids is taught on page 2359, col. 1, first paragraph under the heading of "RESULTS", as recited in claim 11. The chimeric Fabs bound specifically to human antigen presenting cells displaying the relevant HLA-DR molecules and demonstrated improved immunogenicity as measured by increased stimulation of IL-2 production in vitro by human CD4⁺ Th cells from donors exposed to HIV-1 antigens (page 2358, in particular), and thus, an immunogenic composition, as recited in claim 28. The '254 patent also does not teach the antibodies being recombinant, as recited in the amended claims. However, one of ordinary skill in the art would have been motivated to make recombinant monoclonal antibodies in order to reduce variability between batches and also to make antibodies in large amounts. Thus, one of ordinary skill in the art would have had a reasonable expectation of success to obtain the claimed invention. The arguments concerning Baier, et al. have been discussed, *supra*.

Conclusion

33. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. 1.136(a).

34. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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C.F.R. 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

35. Papers related to this application may be submitted to Group 1640 by facsimile transmission. Papers should be faxed to Group 1640 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). THE CM1 FAX CENTER TELEPHONE NUMBER IS (703) 305-3014 or (703) 308-4242.
36. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Mary Tung whose telephone number is (703)308-9344. The Examiner can normally be reached Tuesday through Friday from 8:30 am to 6:00 pm. A message may be left on the Examiner's voice mail service. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Christina Chan can be reached on (703) 308-3973. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 1640 receptionist whose telephone number is (703) 308-0196.

Mary B Tung
January 5, 2000
Mary B. Tung, Ph.D.
Patent Examiner
Group 1640

David A. Saunders
DAVID SAUNDERS
PRIMARY EXAMINER
ART UNIT 182/047